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Possum Point Pond D
Comingled Water Sampling Plan

Virginia Electric and Power Company
d/b/a Dominion Virginia Power
Coal Combustion Residuals Pond Closure Project
Possum Point Power Station
Prince William County, Virginia

GAI Project Number: C150132.00, Task 050

November 2015

Prepared by: GAI Consultants, Inc.
Richmond Office
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Glen Allen, Virginia 23060-3328

Prepared for: Virginia Electric and
Power Company d/b/a Dominion Virginia Power
5000 Dominion Boulevard
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Table of Contents

1.0 Project Overview

Virginia Electric and Power Company d/b/a Dominion Virginia Power (Dominion) is in the process of implementing a long-term strategy for closure of its existing coal combustion residuals (CCR) (ash) ponds at Possum Point Power Station (Station), an 1,845 megawatt natural gas and oil fired (previously coal-fired) steam electric generating station near Dumfries, Prince William County, Virginia (VA).

1.1 Introduction

Dominion is currently working to close five existing ash ponds at the Station. The five ponds are designated A, B, C, D and E. Ponds A, B, and C were originally three contiguous ponds that have been inactive since the 1960s. All five ponds are scheduled for closure by April 2018 in accordance with the relevant provisions of the United States Environmental Protection Agency's CCR rule, which was published on April 17, 2015, and codified in 40 Code of Federal Regulations (CFR) Part 257, Subpart D.

Ash Pond E has been decanted, dewatered, and is presently being dredged, all in accordance with applicable state and local requirements. The dredged ash materials and contact/pore waters are being relocated to Ash Pond D for storage. Ash Pond E will then be clean-closed and regraded. Ash Ponds A, B, and C are being dewatered, dredged, and clean-closed. The dredged ash materials and contact/pore waters are in the process of being relocated to Ash Pond D for storage. Following transfer of the dredged ash materials and associated waters from A, B, C and E, the remaining surface water in Ash Pond D will be decanted and the ash will be dewatered so that it can be regraded. Ash Pond D will then be capped and closed. A single regulated solid waste facility for the Station's ash will be maintained at closed Ash Pond D subject to all applicable state closure and post-closure care requirements.

1.2 Project Description

Pond D Comingled Water includes stormwater as well as the following waters as a result of the closure activities of Ash Ponds A, B, C, D, and E:

- ash dewatering water;
- stormwater in contact with ash (Contact Water);
- metals cleaning waste (Outfall 501 Water); and
- oil water (Outfall 502 Water).

Pond D Comingled Water must be drained from Pond D to allow for the closure of Ash Pond D. Pond D Comingled Water includes at least 137 million gallons that has accumulated in Pond D. Sampling and testing of the Pond D Comingled Water was performed in May and July of 2015. However, the subsequent ash pond closure activities has resulted in a significant volume of additional ash dewatering and contact water that has been pumped to Pond D. Therefore, additional sampling and testing reflecting current water quality is proposed.

2.0 Monitoring Objectives

A draft VPDES Permit for Industrial Wastewater Discharges (Permit) has been issued to Dominion in October 2015. The draft Permit requires limits on the Pond D Comingled Water (internal Outfall 503) prior to discharging to one of four potential outfalls: 001/002, 004, and 005. The limits for internal Outfall 503 comprise the following parameters:

- Total Suspended Solids (TSS);
- Oil and Grease;

- Antimony, Total;
- Arsenic, Total;
- Cadmium, Total;
- Chloride;
- Chromium III, Total;
- Chromium VI, Total;
- Copper, Total;
- Lead, Total;
- Mercury, Total;
- Nickel, Total;
- Selenium, Total;
- Silver, Total;
- Thallium, Total;
- Zinc, Total;
- Acute Toxicity - *Ceriodaphnia dubia*;
- Acute Toxicity - *Pimephales promelas*;
- Chronic Toxicity - *Ceriodaphnia dubia*; and
- Chronic Toxicity - *Pimephales promelas*;

In order to identify potential treatment processes for discharging the Pond D Comingled Water, sampling and testing must be performed to identify current water quality characteristics. The current water quality characteristics will be compared to the VA Department of Environmental Quality's proposed draft Permit limits for Internal Outfall 503. In addition to the above listed total metals parameters, dissolved metals will be tested to identify the type of metals treatment (e.g., physical settling and filtration versus chemical precipitation, anaerobic biological, and / or ion exchange).

3.0 Sampling Locations

GAI Consultants, Inc. (GAI) will collect water samples near the surface and below the surface of Pond D in three different areas (refer to Drawing C150132.00 - Sample Locations, Water Sampling Location Map). The proposed sample locations, sample IDs, sample depths, and respective elevations are as follows:

Table 1

Pond D Sample Locations and Depths

Sample Locations	Sample ID	Water Surface Elevation (NAVD 88)[1]	Bottom Elevation[2] (NAVD 88)	Sample Depth (feet)	Sample Elevation (NAVD 88)
Pond D 6	Pond D 6A	108.3±	89±	1.0	107.3±
	Pond D 6B			10.0	98.3±
	Pond D 6C[3]			15.0	93.3±
Pond D 7	Pond D 7A		88±	1.0	107.3±
	Pond D 7B			10.0	98.3±
	Pond D 7C			15.0	93.3±
Pond D 8	Pond D 8A		93±	1.0	107.3±
	Pond D 8B			5.0	103.3±
	Pond D 8C			10.0	98.3±

Notes:

1 Water surface elevation of Pond D is based on an August 4, 2015 field survey measurement on North American Vertical Datum of 1988 (NAVD 88).

2 Estimated bottom elevation from a bathymetric survey performed in March 2015 and converted to NAVD 88.

3 The acute and chronic toxicity samples will be taken only at / for Sample ID **Pond D 6C**. All other tests will be evaluated at all sample locations / depths.

4.0 Frequency and Date of Sampling

Grab samples are proposed to be collected at each location / depth on Thursday, November 5, 2015.

5.0 Field Sampling Procedures

GAI is utilizing the analytical services of ALS Environmental (ALS) located in Middletown, Pennsylvania for the TSS, chlorides, oils and grease, and metals tests. EA Engineering, Science, and Technology, Inc. located in Hunt Valley, Maryland (MD), will perform the biological / toxicity tests. Plastic bottles and labels will be shipped to GAI's Richmond, VA office from both labs. GAI employees, Ms. Allison McCurdy and Ms. Sarah Jennings will complete the labels before arriving on-site at the Station. Additionally, the sampling activities will be coordinated in advance with Dominion representatives.

Pond D Comingled Water will be collected from a canoe. A battery operated peristaltic pump with silicon pump head and low density polyethylene (LDPE) tubing will be used to draw samples. The LDPE tubing will be pre-cut and labeled for each sample and used once to avoid cross contamination. A stainless steel weight will be secured onto the inlet side of the tubing to draw water at the pre-measured depth. Dissolved metal samples will be filtered using the peristaltic pump, tubing, and a disposable Quick Filter prior to preservation. Nitrile gloves, life vests, steel toed boots, hard hats, and eye protection will be worn in accordance with Dominion property regulations for personal protective equipment and GAI Corporate Health and Safety Standards. A Health and Safety Plan will be developed for the sampling activities and approved by the Project Manager and Corporate Health and Safety Manager prior to arriving at the site. Sampling activities will be coordinated in advance with Dominion personnel and the ALS representative who will courier the samples to the lab. Samples to EA Engineering, Science, and Technology, Inc. will be overnighted to their Hunt Valley, MD office. Chain of custody forms will be completed before shipping / delivering the sample bottles to the courier / United States Postal Service.

6.0 Analytical Testing Summary

GAI will field measure and record temperature and pH for each sample ID / depth at each sample location. TSS, oils and grease, chlorides, and total / dissolved metals are proposed to be analyzed by ALS for each sample ID / depth at each sample location. Biological / toxicity testing is proposed by EA Engineering, Science, and Technology, Inc. for a single sample ID / depth and location.

Table 2

Parameters for Analysis

Constituent	Number of Bottles per Sample ID	Preservant	Hold Time	Analytical Method
pH	Not Applicable (N / A)	N / A	N / A	S4500HB-00
Temperature	N / A	N / A	N / A	**EPA 170.1**
TSS	One, 500 mL Plastic	N / A	7 Days	S2540D-11
Chloride		N / A	28 Days	EPA 300.0

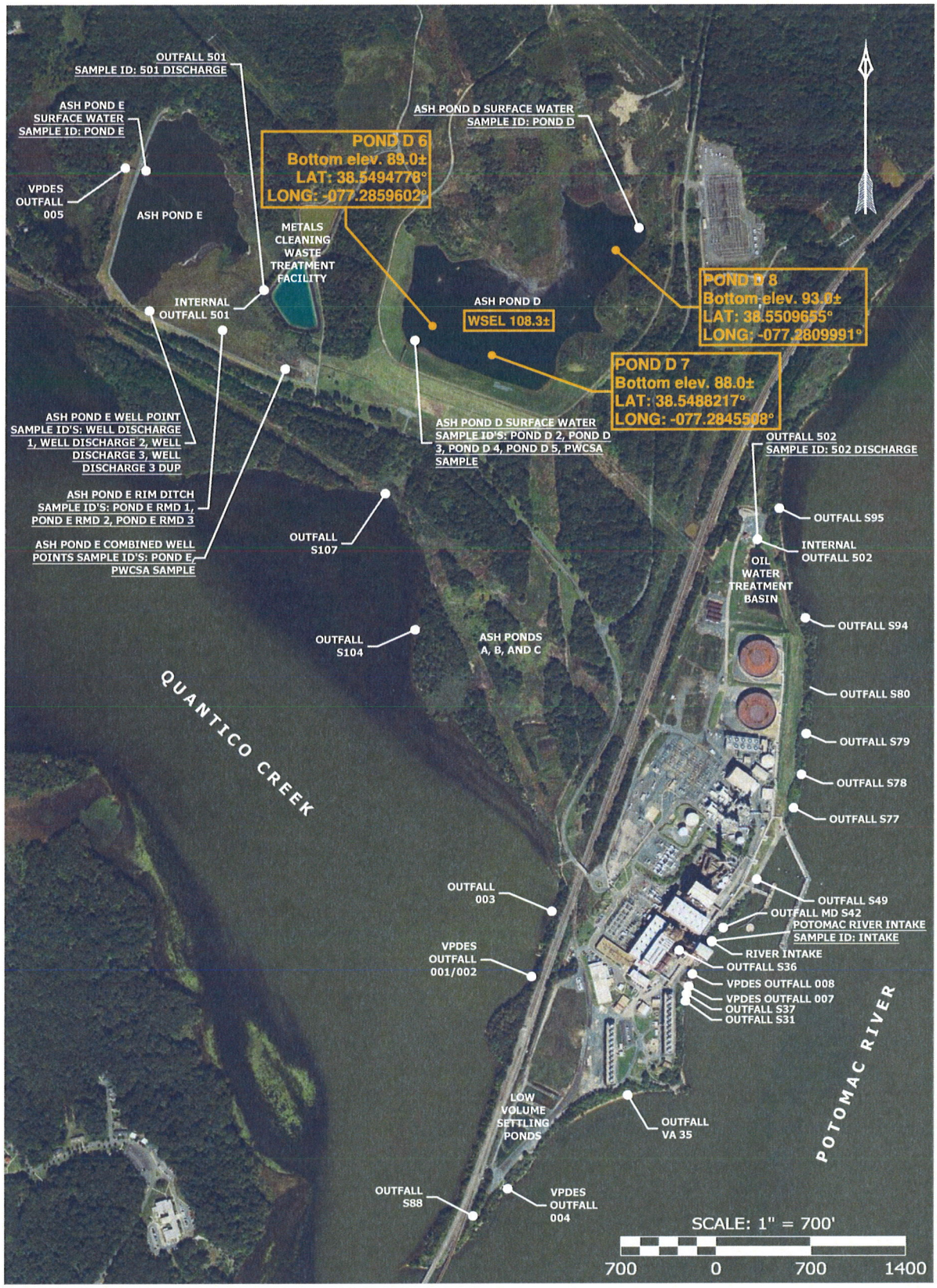
Constituent	Number of Bottles per Sample ID	Preservant	Hold Time	Analytical Method
Oils and Grease	Two, One Liter Amber	H_2SO_4	28 Days	EPA 1664B
Antimony, Total	One, 500 mL Plastic	HNO_3	6 Months	EPA 200.8
Arsenic, Total				EPA 200.8
Cadmium, Total				EPA 200.8
Chromium, Total				EPA 200.8
Chromium III, Total				Calculation
Copper, Total				EPA 200.8
Lead, Total				EPA 200.8
Mercury, Total				EPA 245.1
Nickel, Total				EPA 200.8
Selenium, Total				EPA 200.8
Silver, Total				EPA 200.8
Thallium, Total				EPA 200.8
Zinc, Total				EPA 200.8
Chromium VI, Total	One, 250 mL Amber	NH_4OH	14 Days	EPA 218.6
Antimony, Dissolved[1]	One, 500 mL Plastic	HNO_3	6 Months	EPA 200.8
Arsenic, Dissolved[1]				EPA 200.8
Cadmium, Dissolved[1]				EPA 200.8
Chromium, Dissolved[1]				EPA 200.8
Chromium III, Dissolved[1]				Calculation
Copper, Dissolved[1]				EPA 200.8
Lead, Dissolved[1]				EPA 200.8
Mercury, Dissolved[1]				EPA 245.1
Nickel, Dissolved[1]				EPA 200.8
Selenium, Dissolved[1]				EPA 200.8
Silver, Dissolved[1]				EPA 200.8
Thallium, Dissolved[1]				EPA 200.8
Zinc, Dissolved[1]				EPA 200.8
Chromium VI, Dissolved[1]	One, 250 mL Amber	NH_4OH	14 Days	EPA 218.6
48-Hour Static Acute Toxicity Test using *Ceriodaphnia dubia*[2]	Five, One-Gallon Plastic	N / A	36 Hours	40 CFR 136.3
48-Hour Static Acute Toxicity Test using *Pimephales promelas*[2]	Five, One-Gallon Plastic	N / A	36 Hours	40 CFR 136.3
Chronic 3-Brood Static Renewal Survival and Reproduction Test using *Ceriodaphnia dubia*[2]	Five, One-Gallon Plastic	N / A	36 Hours	40 CFR 136.3
Chronic 7-Day Static Renewal Survival and Growth Test using *Pimephales promelas*[2]	Five, One-Gallon Plastic	N / A	36 Hours	40 CFR 136.3

Notes:

1 Samples for dissolved constituent analyses will be filtered in the field prior to preservation.

2 Acute and Chronic Toxicity Tests will be analyzed from a single Sample Point / Sample ID.

DRAWING



GAI CAD FILE PATH: Z:\Energy\2015\C150132.00 – DOM – Possum Point PS CCB\Working Docs\Task 1.3\C150132.00 – Sample Locations.dwg

DRAWING TITLE: WATER SAMPLING LOCATION MAP			DRAWN BY: VASKOAJ	CHECKED BY: DEBARJD	APPROVED BY: QUINLSC
PROJECT: POSSUM POINT POWER STATION 19000 POSSUM POINT ROAD DUMFRIES, PRINCE WILLIAM COUNTY VIRGINIA 22026	gai consultants	CLIENT: DOMINION RESOURCES SERVICE, INC. 5000 DOMINION BOULEVARD GLEN ALLEN, VIRGINIA 23060	DWG TYPE:	SCALE: 1" = 700'	ISSUE DATE: 10/23/2015
			SHEET NO.: 1 OF 1		
			GAI FILE NUMBER: C150132.00 – Sample Locations		
			GAI DRAWING NUMBER: 11x17 VDEQ		

This drawing was produced with computer aided drafting technology and is supported by electronic drawing files. Do not revise this drawing via manual drafting methods.

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